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TREATMENT OF GENU VALGUM

WITHOUT DIVISION OF BONE.

BY

HENRY F. BAKER, F.R.C.S.Ed.,

HOUSE-SURGEON TO THE ROYAL ORTHOPÆDIC HOSPITAL;
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It is not my intention to enter into the respective merits of the several operations for the cure of genu valgum. Whatever opinion may be held as to the risk of cutting into the knee-joint or producing a compound fracture in its immediate neighbourhood, I think all surgeons will agree that, in many of the cases that come under their notice, especially in private practice, the deformity is not of so serious a nature that the proposal to perform a severe operation would be entertained by them, or consented to by the friends of the patient. It is a matter of great importance, however, that the treatment of these cases should not be neglected, more especially because, if they be not entirely cured, tilting of the pelvis must take place, and this is necessarily followed by lateral curvature of the spine.

I shall be forgiven, probably, for going somewhat into detail with regard to the treatment of these cases, and mentioning what must appear to be very obvious directions to many of the Fellows of this Society. My excuse must be, that I am convinced by practical experience that the neglect of very trifling points in the manufacture and adjustment of instruments in the treatment of all orthopædic cases has been the frequent cause of disappointment and failure.

Cases of genu valgum may be conveniently divided into two classes, viz.: (1) those that can be cured by gradual extension alone; and (2) those that can be cured by gradual extension after the subcutaneous division of tendon or ligament. The tendons or ligaments that may require division are the biceps femoris, the ilio-tibial band, and the external lateral ligament. Through the kindness of Mr. Eve, the Curator of the Museum at St. Bartholomew's Hospital, I am able to

show to-night a knee-joint carefully dissected by my friend Mr. Bowlby, which shows the tendons and ligaments around the joint. The long external lateral ligament is well shown between the two points of insertion of the tendon of the biceps; and it is at this point that it can be readily divided, either with or without the tendon, according to the severity of the case. With reference to the decision as to the necessity of tenotomy, an examination should be made of the deformed limb, and an attempt be made to straighten it. While this is being done, the structures above mentioned should be felt for; and, if little or no contraction can be detected, the case is one for treatment by gradual extension without operation. If, on the other hand, either the tendon of the biceps or any band of fascia or ligament can be felt holding the limb in its deformed position and preventing its being straightened, one or all of them must be divided according to the severity of the deformity. I think the reason why many surgeons consider that the treatment of genu valgum by these simple means is unsatisfactory, is that they have not made use of a properly constructed instrument, or have, in some cases, allowed the patient to walk about during the treatment.

To carry out this mode of treatment satisfactorily, it is in the first place absolutely essential that the patient be kept off his feet; and the important points to attain in the construction of a proper instrument are that it should keep the knee in the *extended* position, and prevent the leg from *rotating*, at the same time that, by its means, the knee-joint can be acted upon in the *lateral* direction, with sufficient force to gradually overcome the deformity. No instrument fitted to a boot and used while the patient walks about can do this.

The instrument here shown (Fig. 1) has been constructed at my suggestion, and, I believe, carries out these conditions efficiently. It will be seen to consist of a trough (A) for the thigh, which takes its bearing on the great trochanter of the femur, and is connected with the leg-splint by a stem on the outer side of the leg, which is provided with a cog-wheel (B) opposite the knee-joint. A band (C) encircles the knee. The special points in which it differs from the trough-instruments in common use are, that it has a wing hinged to the back part of the leg-splint, on the inner side of the leg and ankle, which, together with an ankle-strap (D) and an inside toe-strap (H), keeps the heel and leg from rotating inwards, a pad (I) being introduced within the wing at F, to press on the internal tubercle of the os calcis, and the wing being kept in its place by the straps M and N. There is also a rigid bar (K) at the back of the knee, and its action is to keep the joint in a perfectly extended

position, whatever amount of force is used *laterally*. To this bar is attached a carefully made leather strap (C), formed in such a way as to

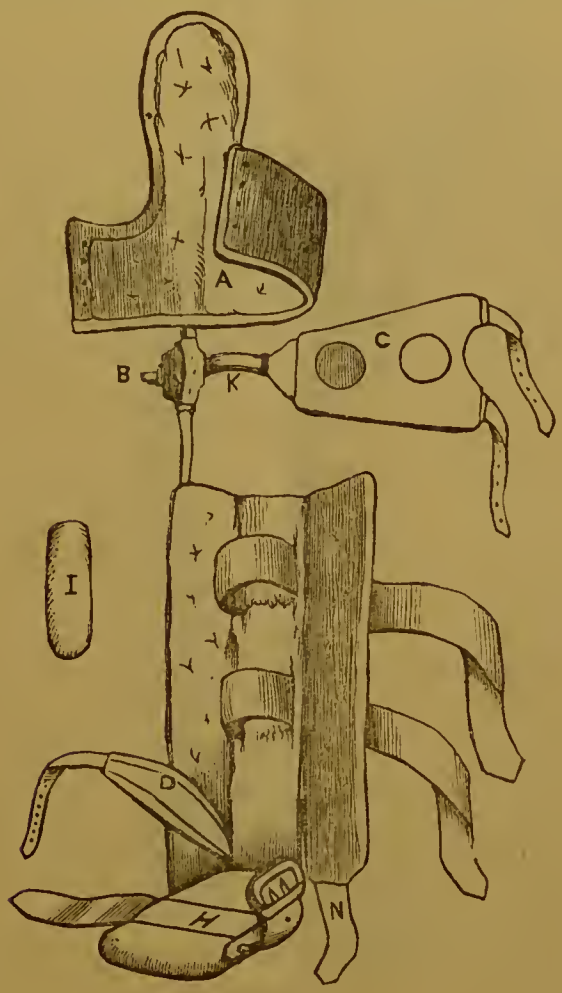


Fig. 1.

cause the least possible amount of pressure on the patella, and also to diffuse the pressure over the inner condyle when the cog-wheel (B) at the knee is acted upon. The instrument is also made in such a manner that, in drawing the limb straight, it adapts itself to its altered position, and fits the straightened limb as well as it before fitted the deformed one. Figure 2 shews the apparatus applied.

Before the application of the instrument, a soft woollen stocking should be put on the deformed limb, and a bandage carefully applied over it from the foot upwards. The instrument is then made to exactly correspond to the angle of the deformed leg by means of the screw (B) at the knee joint, and is to be then applied and the straps adjusted, and

the wing and pad fixed in their place. The cog-wheel (B) opposite the knee-joint is then acted on so as to slightly straighten the leg until pain

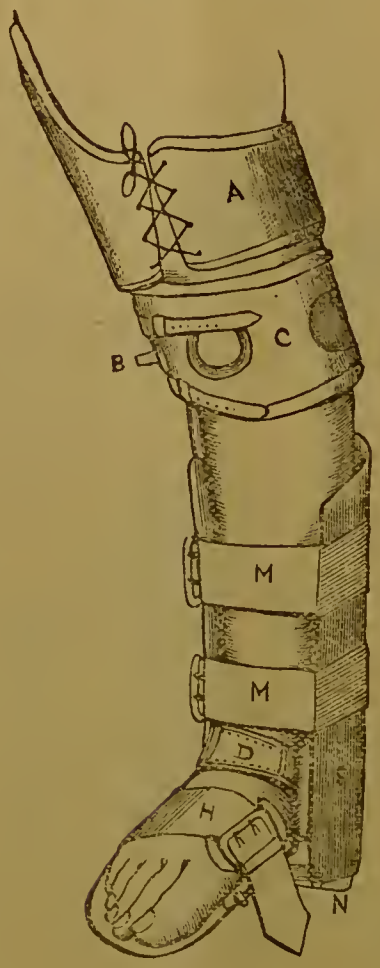


Fig. 2

is complained of, when the screw must be a little reversed, and the patient made quite easy. In this manner, the leg must be slightly stretched every day, when the resistance will be found to gradually give way, and the limb will be brought into the straight position. Great caution must be used in the application of pressure; for, if a sore be allowed to form on the skin on the inner condyle of the femur, all treatment must for a time be abandoned, and much time will be lost.

It is advisable that the instrument should be removed occasionally, and more frequently at first, before the skin has become accustomed to its pressure; and the leg should then be washed and powdered, and the knee flexed and extended to prevent its becoming stiff. This treat-

ment must be continued until the limb is quite straight; and, as there is danger of relapse in this, as in all other deformities, it is necessary that, when the patient begins to walk, steel supports, fixed to the boots and extending to the hips, should be worn during the day.

In those cases in which it is necessary to subcutaneously divide any tendon or ligament, a piece of folded lint is to be put on the puncture, and the leg kept at rest until the wound is healed, which takes place in four or five days. The instrument is then to be applied, and the limb brought into the straight position as before described.

The instrument here shown has been made for me by Mr. Gumpel of Leicester Square, and many of the details are the result of his ingenuity.